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*Erysimum hedgeanum* (Brassicaceae), a New Name Replacing  
*Arabidopsis erysimoides*

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ABSTRACT. *Erysimum hedgeanum* is a new name proposed to replace the later homonym that would result from the transfer of *Arabidopsis erysimoides* to *Erysimum*.

During the past decade, increasing interest in *Arabidopsis* resulted from the selection of one of its species, *A. thaliana* (L.) Heynhold, as the model flowering plant in basic and applied research in molecular genetics, developmental biology, plant physiology, evolution, and other fields. The species has been recently named by Patrusky (1991) as the "Drosophila botanica or the fruit fly of plant biology," and the outstanding features for its selection as a model organism have been covered by many reviews. The interested reader should consult Meyerowitz (1989) and references therein.

*Arabidopsis* is one of the most poorly defined and artificially delimited genera of the Brassicaceae (Cruciferae) (Al-Shehbaz, 1988; Hedge & Tan, 1987). Critical evaluation of the generic disposition of species previously assigned to *Arabidopsis* is needed. Biosystematic and phylogenetic studies of *Arabidopsis* and its generic relatives are well underway at the Missouri Botanical Garden. The present paper deals with one of the problematic species, which for the reasons below should be assigned to the genus *Erysimum*.

***Erysimum hedgeanum*** Al-Shehbaz, nom. nov.

Replaced name: *Arabidopsis erysimoides* Hedge & Kit Tan, Pl. Syst. Evol. 156: 202. 1987; not *E. erysimoides* (Karelin & Kirilov) Kuntze, Rev. Gen. 2: 933. 1891 [listed as *E. erysimodes* but was based on *Arabis erysi-*

*moides* Karelin & Kirilov]. TYPE: Saudi Arabia. Hail to Jabbah road, Najud, between Qulban & Qana, sand dune, 900 m, 9 Mar. 1986, I. S. Collenette 5713 (holotype, E; isotype, K).

*Erysimum hedgeanum*, which is named in honor of Ian C. Hedge (Royal Botanic Garden, Edinburgh), an outstanding student of the Brassicaceae and the senior author of *Arabidopsis erysimoides*, was originally described in *Arabidopsis* mainly because its authors (Hedge & Tan, 1987: 202) concluded that "A thorough herbarium and literature search in *Erysimum* failed to reveal any species that was at all like the Arabian plant and our conclusion was that it could not be described as a new species in *Erysimum*. Dr. Adolf Polatschek (Natural History Museum, Vienna) to whom we sent some material for examination also concluded that it could not be described as a new species in *Erysimum*." However, no reasons were given to justify its exclusion from *Erysimum*. The closely appressed medifixed trichomes of *E. hedgeanum* are characteristic of many species of the genus, and the "unusual" combination of linear-filiform leaves and reflexed fruits are indeed found in several species of *Erysimum*. In fact, *E. hedgeanum* shares with *E. sisymbrioides* C. A. Meyer, another annual member of the genus, all the basic characters of indumentum, flower, and fruit morphology that definitely support their placement in *Erysimum*. The characters of the leaves and fruits used by Hedge & Tan (1987) to exclude the species from *Erysimum* can also be used to exclude it from *Arabidopsis*. In fact, no species of *Arabidopsis* or its related genera have the trichome type of *E. hedgeanum*. Medifixed appressed trichomes are

found in other genera of the Brassicaceae (e.g., *Lobularia* Desvaux, *Weberbaueria* Gilg & Muschler, *Farsetia* Turra), but in all these cases either all species of the genus have the same trichome type or, in the case of *Weberbaueria* (Al-Shehbaz, 1990), trends of the evolution to medifixed trichomes are found.

In my opinion, every aspect of *Erysimum hedgeanum* supports its placement in *Erysimum* and not in *Arabidopsis*. The absence of a very close relative of this species does not justify its exclusion from *Erysimum* nor does it support its placement in a new genus. Furthermore, Hedge & Tan's (1987) argument that *E. hedgeanum* (as *A. erysimoides*) shares with *Arabidopsis* a similar habit, nonsaccate sepals, small petals, incumbent cotyledons, and readily dehiscent many-seeded fruits can be misleading because this combination of characters is common elsewhere in the Brassicaceae, including *Erysimum*, and must have evolved independently several times. The presence of appressed, medifixed, 2-branched trichomes oriented parallel to the long axes of all exposed parts of the plant (excluding petals and stamens) is a typical feature of *Erysimum*

(Price, 1987) and should therefore receive more weight in the generic placement of this species.

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